

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1 (currently amended): An apparatus for depositing particulate matter into a supply of fibrous material moving in a machine direction comprising:

a forming jet assembly ~~an apparatus adapted~~ to provide a supply of fibrous material comprising an opened tow of continuous crimped fibers;

 a feed tray having an outlet positioned above the supply of fibrous material;

 a motor coupled to the feed tray for vibrating the feed tray;

 wherein when the motor vibrates the feed tray particulate matter in the feed tray is deposited onto the supply of fibrous material; and

 wherein when the motor does not vibrate the feed tray substantially no particulate matter in the feed tray is deposited onto the supply of fibrous material.

Claim 2 (original): The apparatus of claim 1, wherein the particulate matter comprises superabsorbent particles.

Claim 3 (original): The apparatus of claim 1, wherein the particulate matter comprises an opened tow of cellulose acetate.

Claim 4 (original): The apparatus of claim 1, wherein the apparatus is adapted to deposit particulate matter into the supply of fibrous material to form a composite having about 30% by weight of particulate matter and about 70% by weight of fibrous material to about 95% by weight of particulate matter and about 5% by weight of fibrous material.

Claim 5 (original): The apparatus of claim 1, wherein the apparatus is adapted to deposit particulate matter into the supply of fibrous material to form a composite having about 60% by weight of particulate matter and about 40% by weight of fibrous material to about 90% by weight of particulate matter and about 10% by weight of fibrous material.

Claim 6 (original): The apparatus of claim 1, wherein the apparatus is adapted to deposit particulate matter into the supply of fibrous material to form a composite having about 75% by weight of particulate matter and about 25% by weight of fibrous material to about 85% by weight of particulate matter and about 15% by weight of fibrous material.

Claim 7 (original): The apparatus of claim 1, wherein the particulate matter is deposited at a flow rate of about 10,000 g/min to about 20,000 g/min.

Claim 8 (original): The apparatus of claim 1, wherein the particulate matter is deposited at a flow rate of about 12,500 g/min to about 17,500 g/min.

Claim 9 (original): The apparatus of claim 1, wherein the particulate matter is deposited at a flow rate of about 15,000 g/min.

Claim 10 (original): The apparatus of claim 1, wherein the motor is a pneumatic vibrator, an electromagnetic vibrator, a magnetic vibrator, an electric vibrator, or a hydraulic vibrator.

Claim 11 (original): The apparatus of claim 1, wherein the motor vibrates at any frequency up to about 600 Hz.

Claim 12 (original): The apparatus of claim 1, wherein the motor vibrates at any frequency up to about 520 Hz.

Claim 13 (original): The apparatus of claim 1, wherein the motor vibrates at any frequency up to about 430 Hz.

Claim 14 (original): The apparatus of claim 1, wherein the motor vibrates at a pitch of about 0.01 inches to about 0.125 inches.

Claim 15 (original): The apparatus of claim 1, wherein the motor vibrates at a pitch of about 0.02 inches to about 0.10 inches.

Claim 16 (original): The apparatus of claim 1, wherein the motor vibrates at a pitch of about 0.04 inches to about 0.08 inches.

Claim 17 (original): The apparatus of claim 1, further comprising a control system that increases or decreases the amount of particulate matter deposited into the fibrous material by increasing or decreasing, respectively, the motor frequency and/or the motor pitch.

Claim 18 (currently amended): An apparatus for depositing particulate matter into a supply of fibrous material moving in a machine direction comprising:

a forming jet assembly ~~an apparatus adapted~~ to provide a supply of fibrous material comprising an opened tow of continuous crimped fibers;

a feed tray comprising a pan having an outlet positioned above the supply of fibrous material and a gate disposed above and spaced apart from the pan, located proximal to the outlet and dividing the pan into upstream and downstream portions;

a motor coupled to the feed tray for vibrating the feed tray;

wherein when the motor vibrates the feed tray particulate matter in the feed tray flows beneath the gate and is deposited onto the supply of fibrous material; and

wherein when the motor does not vibrate the feed tray particulate matter in the feed tray is substantially contained in the upstream portion of the pan and substantially no particulate matter is deposited onto the supply of fibrous material.

Claim 19 (original): The apparatus of claim 18, wherein the upstream portion of the pan is covered.

Claim 20 (original): The apparatus of claim 18, wherein the gate is adjustable to increase or decrease the distance by which the gate is spaced apart from the pan.

Claim 21 (original): The apparatus of claim 18, wherein the gate is spaced apart from the

pan by about 0.10 inches to about 1.00 inches.

Claim 22 (original): The apparatus of claim 18, wherein the gate is spaced apart from the pan by about 0.125 inches to about 0.75 inches.

Claim 23 (original): The apparatus of claim 18, wherein the gate is spaced apart from the pan by about 0.25 inches to about 0.50 inches.

Claim 24 (original) The apparatus of claim 18, further comprising one or more guides for controlling the flow path of the particulate matter.

Claim 25 (original): The apparatus of claim 18, wherein the pan is contoured to control the flow path of the particulate matter.

Claim 26 (currently amended): ~~The An~~ apparatus of ~~claim 18, further~~ for depositing particulate matter into a supply of fibrous material moving in a machine direction comprising:

an apparatus adapted to provide a supply of fibrous material comprising an opened tow of continuous crimped fibers;

a feed tray comprising a pan having an outlet positioned above the supply of fibrous material and a gate disposed above and spaced apart from the pan, located proximal to the outlet and dividing the pan into upstream and downstream portions;

two or more side plates, each side plate being disposed on a side of the feed tray and approximately parallel with the machine direction to inhibit the passage of air in a direction perpendicular to the machine direction;

a motor coupled to the feed tray for vibrating the feed tray;

wherein when the motor vibrates the feed tray particulate matter in the feed tray flows beneath the gate and is deposited onto the supply of fibrous material; and

wherein when the motor does not vibrate the feed tray particulate matter in the feed tray is substantially contained in the upstream portion of the pan and substantially no particulate matter is deposited onto the supply of fibrous material.

Claim 27 (original): The apparatus of claim 18, further comprising a vacuum draw roll for conveying the supply of fibrous material positioned below the outlet.

Claim 28 (original): The apparatus of claim 27, wherein the outlet is located about 0.25 inches to about 4.00 inches from the vacuum draw roll.

Claim 29 (original): The apparatus of claim 27, wherein the outlet is located about 0.375 inches to about 1.00 inch from the vacuum draw roll.

Claim 30 (original): The apparatus of claim 27, wherein the outlet is located about 0.50 inches from the vacuum draw roll.

Claim 31 (original): The apparatus of claim 18, wherein the active width of the feed tray is about 2 inches to about 12 inches.

Claim 32 (previously presented): The apparatus of claim 18, wherein the active width of the feed tray is about 3 inches to about 10 inches.

Claim 33 (previously presented): The apparatus of claim 18, wherein the active width of the feed tray is about 3.75 inches to about 4.00 inches.

Claim 34 (withdrawn): A method for depositing particulate matter into a supply of fibrous material moving in a machine direction comprising:

- providing a feed tray having an outlet positioned above the supply of fibrous material;

- disposing particulate matter into the feed tray;

- arranging the feed tray such that the particulate matter does not flow out of the feed tray when the feed tray is not moving; and

- vibrating the feed tray to cause the particulate matter to flow out of the feed tray and onto the supply of fibrous material.

Claim 35 (withdrawn): The method of claim 34, further comprising stopping vibrating the motor to cause the particulate matter to stop flowing out of the feed tray.

Claim 36 (withdrawn): The method of claim 34, wherein the particulate matter comprises superabsorbent particles.

Claim 37 (withdrawn): The method of claim 34, wherein the supply of fibrous material comprises an opened tow of cellulose acetate.

Claim 38 (withdrawn): The method of claim 34, wherein the step of vibrating comprises vibrating the feed tray to cause the particulate matter to flow out of the feed tray and onto the supply of fibrous material to form a composite having about 30% by weight of particulate matter and about 70% by weight of fibrous material to about 95% by weight of particulate matter and about 5% by weight of fibrous material.

Claim 39 (withdrawn): The method of claim 34, wherein the step of vibrating comprises vibrating the feed tray to cause the particulate matter to flow out of the feed tray and onto the supply of fibrous material to form a composite having about 60% by weight of particulate matter and about 40% by weight of fibrous material to about 90% by weight of particulate matter and about 10% by weight of fibrous material.

Claim 40 (withdrawn): The method of claim 34, wherein the step of vibrating comprises vibrating the feed tray to cause the particulate matter to flow out of the feed tray and onto the supply of fibrous material to form a composite having about 75% by weight of particulate matter and about 25% by weight of fibrous material to about 85% by weight of particulate matter and about 15% by weight of fibrous material.

Claim 41 (withdrawn): The method of claim 34, wherein the step of vibrating comprises vibrating the feed tray to cause the particulate matter to flow out of the feed tray and onto the supply of fibrous material at a flow rate of about 10,000 g/min to about 20,000 g/min.

Claim 42 (withdrawn): The method of claim 34, wherein the step of vibrating comprises vibrating the feed tray to cause the particulate matter to flow out of the feed tray and onto the supply of fibrous material at a flow rate of about 12,500 g/min to about 17,500 g/min.

Claim 43 (withdrawn): The method of claim 34, wherein the step of vibrating comprises vibrating the feed tray to cause the particulate matter to flow out of the feed tray and onto the supply of fibrous material at a flow rate of about 15,000 g/min.

Claim 44 (withdrawn): The method of claim 34, wherein the step of vibrating comprises vibrating the feed tray at any frequency up to about 600 Hz to cause the particulate matter to flow out of the feed tray and onto the supply of fibrous material.

Claim 45 (withdrawn): The method of claim 34, wherein the step of vibrating comprises vibrating the feed tray at any frequency up to about 520 Hz to cause the particulate matter to flow out of the feed tray and onto the supply of fibrous material.

Claim 46 (withdrawn): The method of claim 34, wherein the step of vibrating comprises vibrating the feed tray at any frequency up to about 430 Hz to cause the particulate matter to flow out of the feed tray and onto the supply of fibrous material.

Claim 47 (withdrawn): The method of claim 34, wherein the step of vibrating comprises vibrating the feed tray at a pitch of about 0.01 inches to about 0.125 inches to cause the particulate matter to flow out of the feed tray and onto the supply of fibrous material.

Claim 48 (withdrawn): The method of claim 34, wherein the step of vibrating comprises vibrating the feed tray at a pitch of about 0.02 inches to about 0.10 inches to cause the particulate matter to flow out of the feed tray and onto the supply of fibrous material.

Claim 49 (withdrawn): The method of claim 34, wherein the step of vibrating comprises vibrating the feed tray at a pitch of about 0.04 inches to about 0.08 inches to cause the

particulate matter to flow out of the feed tray and onto the supply of fibrous material.

Claim 50 (withdrawn): The method of claim 34, wherein said step of vibrating further comprises increasing or decreasing the vibration speed to increase or decrease, respectively, the amount of particulate matter that flows out of the feed tray and onto the supply of fibrous material.

Claim 51 (withdrawn): The method of claim 34, wherein said step of vibrating further comprises increasing or decreasing the vibration pitch to increase or decrease, respectively, the amount of particulate matter that flows out of the feed tray and onto the supply of fibrous material.

Claim 52 (withdrawn): The method of claim 34, further comprising the step of using a loss-in-weight control system to meter the amount of particulate matter that flows out of the feed tray.

Claim 53 (withdrawn): An absorbent article comprising:

- a topsheet;

- a backsheet; and

- an absorbent core disposed between the topsheet and the backsheet comprising fibrous material and particulate matter;

- wherein the particulate matter is distributed in the fibrous material using the apparatus of claim 1.

Claim 54 (withdrawn): The absorbent article of claim 53, wherein the fibrous material comprises an opened tow of cellulose acetate and the particulate matter comprises superabsorbent particles.

Claim 55 (withdrawn): An absorbent article comprising:

- a topsheet;

- a backsheet; and

an absorbent core disposed between the topsheet and the backsheet comprising fibrous material and particulate matter;

wherein the particulate matter is distributed in the fibrous material using the apparatus of claim 18.

Claim 56 (withdrawn): The absorbent article of claim 55, wherein the fibrous material comprises an opened tow of cellulose acetate and the particulate matter comprises superabsorbent particles.

Claim 57 (withdrawn): An absorbent article comprising:

a topsheet;

a backsheet; and

an absorbent core disposed between the topsheet and the backsheet comprising fibrous material and particulate matter;

wherein the particulate matter is distributed in the fibrous material using the method of claim 34.

Claim 58 (withdrawn): The absorbent article of claim 57, wherein the fibrous material comprises an opened tow of cellulose acetate and the particulate matter comprises superabsorbent particles.